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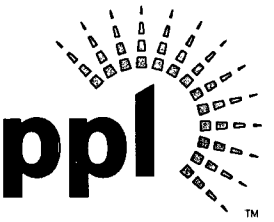

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U. S. Nuclear Regulatory Commission
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SUSQUEHANNA STEAM ELECTRIC STATION
DC ELECTRICAL POWER SYSTEMS TECHNICAL SPECIFICATION 3.8.4 REQUEST FOR INFORMATION (RAI) SUPPLEMENTAL INFORMATION **Docket Nos. 50-387**
PLA-6409 **and 50-388**

Reference: 1) *PLA-6304, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC), "Proposed Amendment No. 298 to Unit 1 License NPF-14 and Amendment No. 268 to Unit 2 License NPF-22: DC Electrical Power Systems Technical Specification 3.8.4," dated March 28, 2008.*

In accordance with the provisions of 10 CFR 50.90, PPL Susquehanna, LLC (PPL) submitted a request for amendment to the Technical Specifications for Susquehanna (SSES) in Reference 1.

On July 8, 2008, NRC requested, via email and teleconference, that PPL provide supplemental information related to the Technical Specification (TS) amendment request in Reference 1. The PPL responses to the NRC request are provided in the Enclosure.

PPL has reviewed the "No Significant Hazards Consideration" and the "Environmental Consideration" submitted with Reference 1 relative to the Enclosure and determined that there are no changes required to either of these documents.

There are no new regulatory commitments contained herein as a result of the attached responses.

If you have any questions, please contact Mr. Duane L Filchner at (610) 774-7819.

A001
NRR

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on: 8/29/2008

B. T. McKinney

Enclosure: PPL Responses to NRC's Request for Additional Information (RAI)

Copy: NRC Region I
Mr. R. Janati, DEP/BRP
Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector
Mr. B. K. Vaidya, NRC Project Manager

Enclosure to PLA-6409
PPL Responses to NRC's
Request for Additional Information (RAI)

RAI 1: Proposed new Limiting Condition for Operation 3.8.4 Action A.1 would require battery terminal voltage to be restored to greater than or equal to the minimum established float voltage within 2 hours. In the license amendment request dated March 28, 2008, the licensee proposed being able to accomplish this by either restoring the inoperable battery charger to Operable status or by re-establishing the battery's minimum float voltage by an alternate means, such as a spare, temporarily connected battery charger having sufficient capacity to supply the connected loads. Provide a detailed discussion on the proposed 'alternate means' that is being credited for re-establishing the battery's minimum float voltage for both the 125 volt and 250 volt direct current power systems. At a minimum, the response should include a discussion on the design (i.e., capability and capacity) and installation of the proposed 'alternate means.'

PPL Response:

Temporary battery charger DC connections are provided at the 125 VDC and 250 VDC Class 1E Battery main battery fuse boxes. Each fuse box has been modified by installing additional Class 1E fuse blocks and 125 amp Class 1E fuses in the positive and negative leg connections to the DC bus bars within the fuse boxes. The new fuse blocks are connected to permanently installed receptacles mounted on the exterior of each fuse box to facilitate connection of the temporary battery charger to the battery.

The 480 VAC power supply connections for the temporary chargers are established by plugging into a 480 VAC receptacle located in each unit's battery room area. These receptacles are fed from a non-Class 1E 480 VAC Motor Control Center.

In the event a permanently installed 125 VDC or 250 VDC Class 1E charger fails, the 480 VAC power supply connection for the temporary charger would be established by plugging into a 480 VAC receptacle, and the DC load connection would be established by plugging the charger into the permanently installed receptacles mounted on the exterior of each fuse box. After the connections are made, the temporary charger would be placed in service by energizing and loading in accordance with vendor instructions. Operation of the temporary charger will terminate any battery discharge and reestablish the minimum float voltage and float current values to meet TS 3.8.4. The necessary direction and restrictions for use of the temporary battery chargers will be provided by revisions to existing DC system operating procedures.

The 125 VDC temporary charger has a nominal output voltage rating of 130 VDC with an output current rating of 100 amps and a current limit setting of 110 amps. This charger is equal in capacity to the permanently installed 100 amp, Class 1E 125 VDC chargers. The temporary 125 VDC charger is fully capable of carrying the steady-state loads for any Unit 1 or Unit 2 Class 1E 125 VDC channel and restoring the battery terminal voltage and float current values within the TS allowable completion times of LCO 3.8.4.

The 250 VDC temporary charger has a nominal output voltage rating of 260 VDC, with an output current rating of 100 amps and a current limit setting of 110 amps. The existing Class 1E, 250 VDC chargers are rated for 300 amps output. The steady-state loading of the Unit 1 Division II and the Unit 2 Divisions I and II 250 VDC systems is 70 amps or less. When connected to any of these three systems, the 250 VDC, 100 amp temporary charger is fully capable of carrying the steady-state loads and restoring the battery terminal voltage and float current to the TS 3.8.4 allowable values within the specified LCO completion time.

The Unit 1, Division I, 250 VDC system has a steady-state loading of approximately 100 amps. However, since the Unit 1 Division I system also has a redundant 300 amp charger permanently connected as an installed spare, it is extremely unlikey that a connection to the temporary charger would be required. In the unlikely event of a failure of both Unit 1, Division I chargers , the 250 VDC operating procedure will provide direction to reduce the loading on the Unit 1 Division I 250 VDC bus by transferring the non-safety related computer inverter to its alternate 480 VAC source. Transferring this load will reduce the Unit 1, Division I steady-state load to less than 20 amps, and therefore restoration of the battery terminal voltage and float current to the LCO 3.8.4 values would be accomplished by the spare charger within the allowable completion time.

RAI 2: Describe how electrical isolation will be maintained in accordance with Regulatory Guide 1.75, "Physical Independence of Electric Systems," between non-Class 1E and Class 1E circuits when an alternate means (i.e., non-Class 1E spare battery charger) is maintaining the charge on the Class 1E battery. If double isolation (e.g., two breakers in series, a breaker and a fuse, or a breaker supplied with a loss-of-offsite power signal) is not used, provide a detailed discussion on how a fault on the non-Class 1E electrical circuit will not propagate to the Class 1E electrical circuit.

PPL Response:

The battery fuse boxes which contain the main battery fuses for the 125 VDC and 250 VDC Class 1E Batteries have been modified by installing additional Class 1E fuse blocks and one 125 amp Class 1E fuse in each positive leg and one Class 1E fuse in each negative leg connected to the DC bus bars within the fuse boxes. The fuse blocks are connected to permanently installed receptacles mounted on the exterior of the fuse box to provide for the temporary charger DC connection to the battery.

Each temporary charger is equipped with a 2-pole, 150 amp, DC output breaker. Together with the Class 1E fuses mentioned above, double circuit isolation from the non-Class 1E charger to the Class 1E DC battery is provided. In addition, the temporary charger is equipped with a 150 amp DC output fuse and a 480 VAC 3-phase 50 amp (125 VDC charger) or 100 amp (250 VDC charger) input breaker to provide input circuit protection.